

Applicant: Gil La Vean
Application No.: 09/653,057

REMARKS

Reconsideration of the application, as amended, is respectfully requested. By this amendment, claims 32, 37 and 39 were amended. The amendment to these claims defines the communications in terms of the mobile and base stations. Support is found throughout the specification, including at page 5, line 25 through page 7, line 4.

In the office action, claims 32-40 were rejected as under 35 U.S.C. §103 over US Patent Number 5,365,544 (Schilling), taken in view of US Patent Number 4,744,083 (O'Neill) and PCT Application WO 96/08908 (Bolgiano). This rejection, as applied to the amended claims, is respectfully traversed.

Schilling is cited to show a CDMA system which includes a function for locating a mobile terminal.

O'Neill is cited as showing detection of location based on synchronizing of associated code with a received spread spectrum signal, and processing that spread spectrum signal, and adjusting the timing of the code of a second spread spectrum signal. Bolgiano is used to show transmitting a delay determination to a mobile terminal from each base station.

The rejection fails to demonstrate a prior art combination showing means for transmitting a delay determination, means for receiving a delay determination,

Applicant: Gil La Vean
Application No.: 09/653,057

means for determining a mobile terminal's location based on round trip delay information and the base stations' fixed locations, synchronizing of the code with the received spread spectrum signal, processing the received spread spectrum signal by delay lock loop, adjusting the code, clock pulse and timing used for despreading, and comparing the signals with a base station. Specifically, this cited combination necessarily describes the use of delays in determinations based on links which include an intermediate satellite.

Contrary to the reasoning stated in the rejection, O'Neill uses the base station or "ground station" to communicate with satellites. The satellites in turn communicate with the mobile units. For this reason, the delays and signal propagation necessarily includes a relay at the satellite, with the satellite receiving the signal, and then retransmitting a corresponding signal to the mobile units. In general this type of communication is achieved by the satellite communicating in a broadband frequency with the ground station, and communicating with the individual mobile units. Regardless of whether the communication with the ground station is of a different nature from that between the satellite and the mobile unit, the description of O'Neill is that of two communication links. Time delays and other communication factors include the two communication links (in each direction) plus retransmission by the satellite itself.

Applicant: Gil La Vean
Application No.: 09/653,057

The O'Neill system specifically "teaches away from" the basic proposition that spread spectrum signals transmitted by a plurality of base stations are received at the mobile terminal. O'Neill specifically differentiates between the ground station and user terminals in effecting communications through satellite transceivers. The ground station is specifically identified as responsible for receiving messages and position requests from users, calculating user positions, formulating messages, monitoring link availability and transmitting messages to users. This is accomplished by the ground station communicating with the satellites. See Column 17, lines 25-32.

This contradicts Applicant's invention as claimed in that Applicant:

"... [receives] ... first spread spectrum signals transmitted by [a] plurality of base stations at the mobile terminal ... and [determines] the mobile terminal's geographic location based on in part round trip delay information between the mobile terminal and each base station of signals transmitted between the mobile terminal and the respective base stations." (Claim 32; claims 37 and 39 similar.)

The addition of Bolgiano is used to show a delay in determination to the mobile terminal and receiving the delay from the base station. As applied to O'Neill, this would not suggest the present invention in that O'Neill effects communications which are separately applied to ground station communications with the satellites and satellite communications with the mobile units. The combination would be one of determining delays in communications through

Applicant: Gil La Vean
Application No.: 09/653,057

satellites and would not provide useful information regarding the locations of base stations without first implementing a satellite system.

Referring again to the claims, claim 32 defines:

"... locating a mobile terminal within a ... system having base stations with fixed locations ... transmitting from a plurality of base stations a first spread spectrum signal ... receiving of the first spread spectrum signals transmitted by said plurality of base stations at the mobile terminal ... for each received first spread spectrum signal, transmitting a second spread spectrum signal having an associated code time synchronized with that received first spread spectrum signal from the mobile terminal to said plurality of base stations ... adjusting a timing of the associated code of the first spread spectrum signal ... in response to the delay lock loop, and adjusting a timing of the associated code of the second spread spectrum signal ... receiving the second spread spectrum signals at the plurality of base stations ... determining a delay between each base station and the mobile terminal ... and determining the mobile terminal's geographic location based on in part round trip delay information ... of signals transmitted between the mobile terminal and the respective base stations."

Claims 37 and 39 define a similar relationship of signals between the base station and the mobile terminals. It is respectfully submitted that these features extend beyond the synchronization of spread code.

These features clearly distinguish the present invention over the prior art combination.

It is therefore submitted that the application, as presently amended, defines patentable subject matter. Therefore, the application is in a condition for allowance. Such allowance at an early date is respectfully requested.

Applicant: Gil La Vean
Application No.: 09/653,057

If the Examiner feels that a conference will expedite the prosecution of this case, the Examiner is cordially invited to call the undersigned. To that end, an Examiner's amendment to this case would be welcomed and appreciated.

The foregoing is believed to be a complete response to the outstanding office action.

For the above reasons, Applicant respectfully submits that the presently claimed invention is patentable over the prior art. Reconsideration and allowance of the claims is respectfully requested.

Respectfully submitted,

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